Health Advisory for Fish from Lake Natoma (including nearby creeks and ponds) and the Lower American River (Sacramento County)

a fact sheet by
Office of Environmental Health Hazard Assessment
California Environmental Protection Agency

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Why has OEHHA developed a health advisory for fish from Lake Natoma (including nearby creeks and ponds) and the lower American River?

Recent studies by the U.S. Geological Survey and the University of California-Davis indicated that some species of fish in Lake Natoma contain elevated levels of mercury and could pose a health risk to people who eat them frequently. The Office of Environmental Health Hazard Assessment (OEHHA) has evaluated the health effects of eating fish from Lake Natoma and the lower American River, and has issued a report and health advisory with guidelines for the consumption of fish from these water bodies.

OEHHA recommends that individuals limit their consumption of bass, channel catfish, and other types of fish from Lake Natoma and the lower American River. One set of guidelines applies to women of childbearing age and children age 17 and younger, who are particularly sensitive to methylmercury (the most prevalent and toxic form of mercury in fish). A second set applies to women beyond their childbearing years and men.

Because methylmercury affects neurological development, women of childbearing age and children age 17 and younger should carefully follow guidelines for eating these fish.

Why is mercury found in fish from this region?

Mercury contamination of fish is a global problem. Emissions from volcanoes and coal-burning power plants release mercury into the air where it can be carried worldwide before being deposited in oceans, lakes, and rivers. In northern California water bodies, however, mercury is largely a legacy of gold mining activity that began during the Gold Rush and continued until the mid 1950's. Miners used mercury to extract gold from mined materials and discharged the waste into streams, where the mercury accumulated in the sediment. Liquid mercury moves relatively slowly through river systems and accumulates in places where sediments are trapped, such as reservoirs. Bacteria convert this inorganic form of mercury into a more toxic, organic form, known as methylmercury, which fish take in from their diet. Methylmercury can accumulate in fish to concentrations many thousands of times greater than mercury levels in the surrounding water. Because methylmercury accumulates in fish slowly over time, larger fish of a species usually have higher concentrations of methylmercury than smaller fish from the same water body. Predatory fish, such as bass, generally contain more methylmercury than non-predatory fish, such as trout.

What are the human health effects of methylmercury found in these fish?

Developing fetuses and children are especially sensitive to methylmercury. Pregnant women and nursing mothers can pass on methylmercury to their fetuses or infants through the placenta and through breast milk. Excessive exposure to methylmercury can

affect the nervous system in children, leading to subtle decreases in learning ability, language skills, attention, and memory. These effects may occur through adolescence as the nervous system continues to develop. For this reason, a more conservative set of guidelines applies to women of childbearing years and children up to and including age 17.

In adults, the most subtle symptoms of methylmercury toxicity are numbness and tingling sensations in the hands and feet or around the mouth. Other symptoms at higher levels of exposure could include loss of coordination and vision problems.

The levels of methylmercury found in fish from these lakes and rivers should not result in the health effects described above if the proposed guidelines are followed. The extent of health effects depends on the amount of methylmercury that people ingest from the fish that they eat and is also related to a person's body weight.

Should I stop eating all fish from these water bodies?

No. Fish are a nutritious part of your diet when eaten in moderate amounts. By following OEHHA's guidelines for eating fish from this region, you can reduce your risk of health effects from exposure to methylmercury.

Because of the increased sensitivity to methylmercury during periods of neurological development, it is particularly important for women of childbearing age and children age 17 and younger to follow the guidance provided. OEHHA offers separate advice for women beyond their childbearing years and adult men.

Additionally, because virtually all ocean and freshwater fish contain some level of methylmercury, OEHHA recommends that women of childbearing age and children aged 17 and younger do not eat shark, swordfish, king mackerel, or tilefish and limit their total consumption of any locally caught sport fish to no more than one meal per week, unless more restrictive advice is already in place. This advice is consistent with recent federal advice for eating commercial and sport fish.

Where can I get more information?

For information on mercury and other contaminants in sport fish in California, contact:

Office of Environmental Health Hazard Assessment
P.O. Box 4010, Sacramento, CA 95812-4010
(916) 327-7319 or http://www.oehha.ca.gov

For information on mercury in commercial fish, contact:

U. S. Food and Drug Administration
Center for Food Safety and Applied Nutrition
1 (888) SAFEFOOD or http://www.cfsan.fda.gov